(No Model.) 3 Sheets—Sheet 1.

J. A. BRILL.

EQUALIZING DEVICE FOR RAILWAY CARS.

No. 418,440. Patented Dec. 31, 1889.

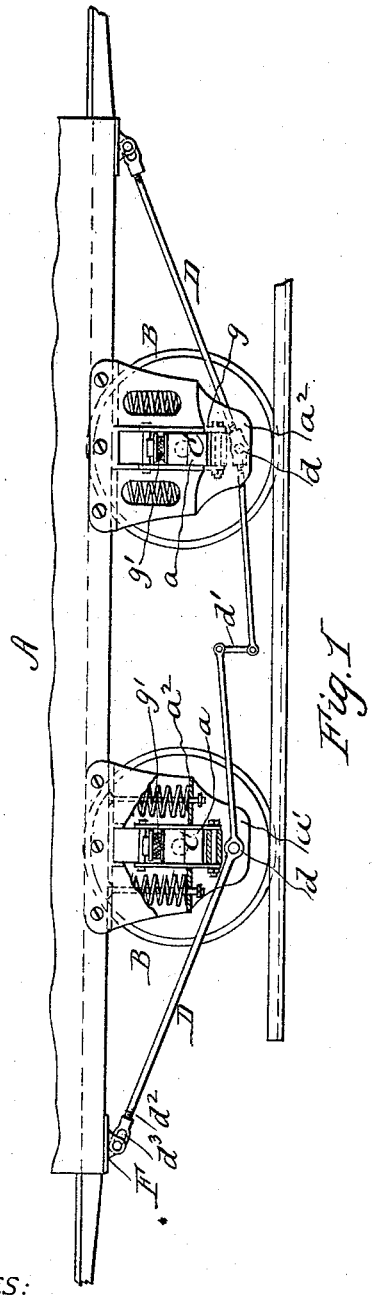

Fig. 1

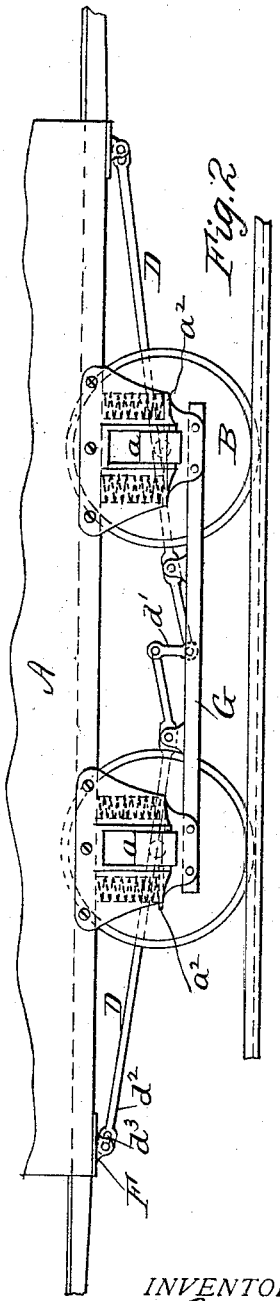

Fig. 2

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Fig. 3

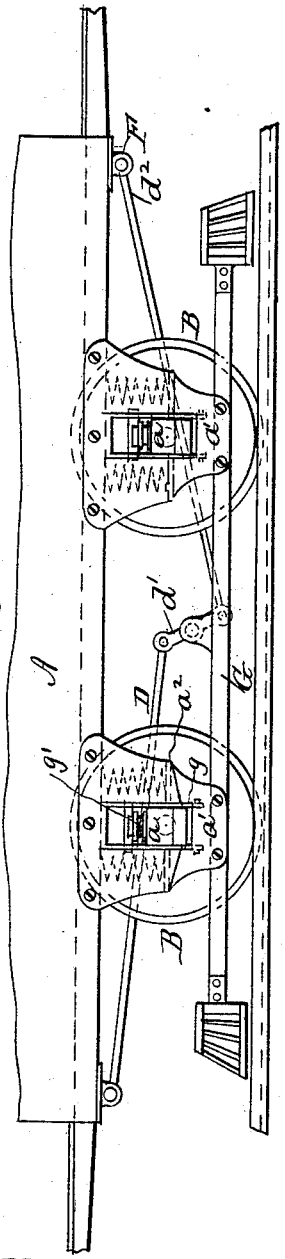
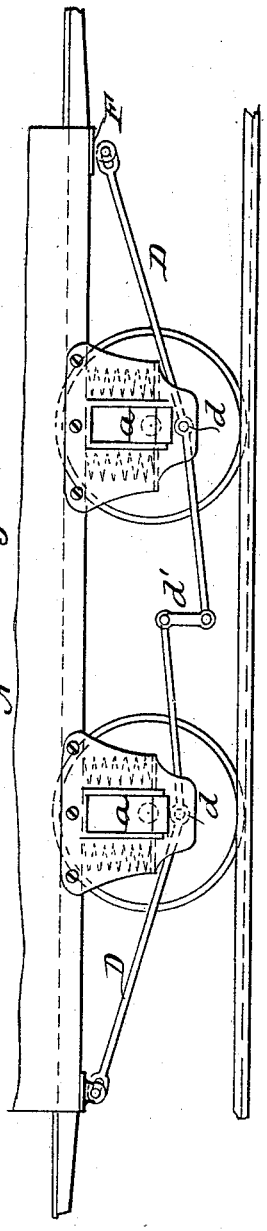


Fig. 4



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(No Model.) 3 Sheets—Sheet 3.

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EQUALIZING DEVICE FOR RAILWAY CARS.

No. 418,440. Patented Dec. 31, 1889.

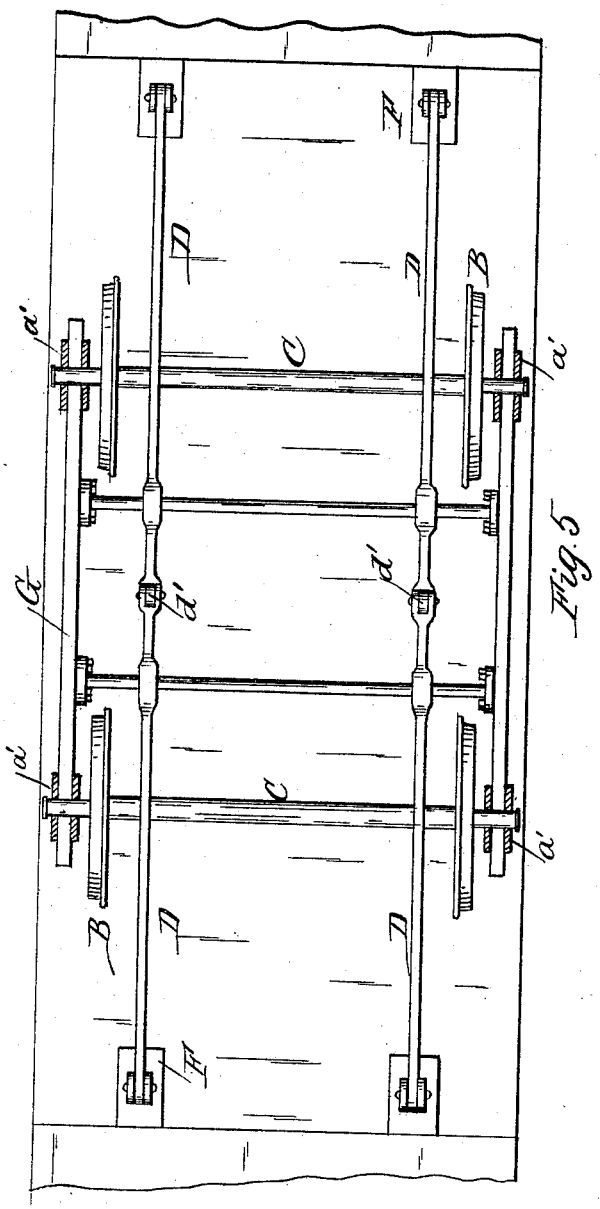

Fig. 5

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UNITED STATES PATENT OFFICE.

JOHN A. BRILL, OF PHILADELPHIA, PENNSYLVANIA.

EQUALIZING DEVICE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 418,440, dated December 31, 1889.

Application filed October 2, 1888. Serial No. 286,960. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BRILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Equalizing Devices for Railway-Cars, of which the following is a specification.

My invention has relation to equalizing devices for railway-cars of the form which, in the event of one end of the car becoming loaded, and consequently tending to depress it to a greater extent than the other end of the car, are by such load at or depression of one end of the car brought into action to correspondingly lower the other end of the car, so as to distribute or equalize such load for keeping the car balanced and preventing inclination of the body of the car and the usual undue oscillation of said body incident thereto.

As heretofore constructed the equalizing devices or bars have been mounted or journaled upon the car-axles; but this is objectionable, for the reason that the friction of such bars or devices on the axles makes the car run hard and more power is required to propel it, and is expensive to construct and keep in repair.

My invention has for its object to avoid such described objections, or, in other words, to so support the equalizing bars or devices as not to diminish or interfere with the easy running of the car; and to this end I attach the equalizing devices to the car-axle boxes or to fixtures attached to or suspended from the axle-boxes.

My invention accordingly consists of the combinations, constructions, and arrangements of parts, as hereinafter described in the specification, and pointed out in the claims.

Reference being had to the accompanying drawings, Figure 1 is a sectional elevation of part of a car and its running-gear, having axle-boxes provided with suspended spring-seat stirrups, and showing the equalizing devices mounted or supported upon said stirrups. Fig. 2 is a like view showing axle-boxes having spring-seats and connected by bars or framing, upon which the equalizing-bars are attached or supported. Fig. 3 is a like view showing the spring-seat stirrups indicated in Fig. 1 provided with or having a frame secured thereto, upon which the equalizing devices are supported. Fig. 4 is a like view showing the frame for the axle-boxes in Fig. 2 dispensed with and the equalizing devices mounted directly upon the axle-boxes; and Fig. 5 is a bottom view of car, showing plan of one arrangement of equalizing devices.

A represents a car; B B, the wheels; C C, the axles therefor, and D D the equalizing levers or arms, which may be constructed and have end connection with the car-body, as desired; but I prefer to make such connection as hereinafter set forth. The equalizing levers or arms D D are supported or mounted upon the axle-boxes or other rigid part of the running-gear, excepting the axles, which is not subject to its vertical vibrations.

In Fig. 1 a form of axle-box is shown having suspended from the box a a stirrup a', having spring-seats a^2, and to these stirrups the arms or levers D are pivoted, as indicated at d, in any suitable manner. In Fig. 3 these stirrups a' are shown provided with a frame G, to which the levers D D are attached or pivoted, as indicated at b.

In Fig. 2 the axle-boxes are shown provided with spring-seats a^2 and connected by bars or framing G, upon which the equalizing bars or levers D D are mounted. In Fig. 4 said frame G is dispensed with and the equalizing-bars are secured to or mounted upon the axle-boxes.

Any form of levers or arms D D may be used, and either they may be pivoted to the axle-boxes, stirrups, or framing G, as indicated in Figs. 1, 2, and 5, and have link-connections d', or these link-connections may be pivoted to said framing, as indicated in Fig. 3, the resultant operation in either case being the same. The ends d^2 of the levers or arms D are hinged or loosely connected to fixed brackets F, secured at each end of the car, as more plainly shown in Fig. 5.

Any of the pivotal bearings or connections for the levers D D may be arranged to have more or less lost motion to compensate for the movements of the car-body on its springs and of the levers moving therewith. In the drawings I have shown the same by making elongated slots d^3 in the ends d^2 of levers D

D; but said slots may be located at any of the other pivotal or bearing connections for said levers, as desired.

The equalizing-levers D D, supported and arranged for operation as described, do not impose any friction upon the axles of the car; hence the latter runs or rides with its usual ease and no additional power is required to run it, and such being the case said equalizing-bars are susceptible of use, which is not the case when they are mounted upon the axles, as the advantage of using them then is more than offset by the non-easy riding of the car.

In using my improvements with either the stirrups a' or with said stirrups and frame G, as shown in Figs. 1 and 3, the yokes g for the stirrups may have a spring-support on the axle-box, as indicated at g' in said figures and as fully shown, described, and claimed in another pending application filed by me on the 15th day of March, 1888, Serial No. 267,205, in order to afford a spring-supported frame for the equalizing-levers D D, and thus avoid undue vibration of same.

Instead of connecting the frame G directly to the axle-boxes, as shown in Fig. 2, it may be suspended from the boxes by means of yokes in a manner similar to that for the stirrups a', and as indicated in said last-named other application.

It will be noted that the levers D D serve as braces between the frame G or the axle-boxes and the ends of the cars, and as they do not have to be finished to fit a journal or bearing on the axle, as has heretofore been done, they are less expensive to make and keep in repair than those supported upon the axles.

As it is obvious that the construction and arrangement of the details of the foregoing may be varied without departing from the spirit of my invention, I do not confine myself to the same as shown and described; but

What I claim is—

1. In combination with a car and its running-gear, a system of equalizing devices or arms connected to each other and at their outer ends to the car-body and mounted or supported upon the axle-boxes, substantially as set forth.

2. A car having equalizing-arms D D, connected to each other and mounted or supported upon the axle-boxes, substantially as set forth.

3. In a car, the combination of frame G, supported on or suspended from the axle-boxes, and equalizing-levers D D, attached to said frame and connected to each other and to the car-body, substantially as set forth.

4. In a car, the combination of axle-boxes, spring-supported frame G, and equalizing-levers D D, connected to each other, supported on frame G, and connected to the car-body, substantially as set forth.

5. In a car, the combination of fixed brackets F on the car-body, the equalizing-levers D D, secured to each other, supported upon the axle-boxes, and connected to brackets F, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. BRILL.

Witnesses:
S. J. VAN STAVOREN,
H. RANDALL.